Update on HSI Standards, Models & Tools for US Navy Ship Acquisitions

For TTCP Annual Mtg
06JUN00

BCI, Inc.

Programs to Discuss

√ ONR/SC-21 S&T MAI

- SALSA (HCDA)
- TIDE
- MMWS
- HCDE

- SHIPSHAPE
- SEAIT/SMART
- ORGNET
- Human Scriptable Animation
- ICE

Ship-SHAPE


Ship - SHAPE
Ship - System HSI,
Affordability & Performance
Engineering Tool
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Version 93

Ship - SHAPE Team

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Ship - SHAPE Objectives

- Influence Ship/Systems Design with Human Requirements, Capabilities, and Limitations;
- Standardize and Formalize Application of HSI in Ship/System Acquisition;
- Reduce the Costs, Workloads, and Time Required to Apply HSI; and
- Bring to the HSI Analyst at one Location all Data, Methods, Tools, Guidelines, and Aids Needed to Apply HSI.

Analysis Environment

- Microsoft Office
  - run on PC/Macintosh platforms w/o changes to code, or file conversion
  - utilizes Office's rich infrastructure (e.g., printing, spell checking, etc.)
  - Office '97 (Windows)
  - Office '98 (Macintosh)
- Microsoft Excel
- Microsoft Word

Ship-SHAPE Displays

- Function Analysis
- Function Requirements
- Mission Function Analysis
- Time lines
  - Scenario
  - Start Time
  - Duration
  - Stop Time
- Allocation of Function
  - Man/Machine
    - Automatic
    - Supervisory
    - Interactive
    - Aided
    - Manual
- Task Network
- SIMWAM*
  - Narrative Histories
  - Workload Summaries
    - by task
    - by position
- Ship Manning Documents

* currently a stand alone product; to be integrated FY'00/01

STATUS

- Phase III SBIR
  - Not Releasable Yet
- Programs:
  - CVN(X)
  - MAI (HCDE)
  - DD 21
  - FAA

Systems Engineering Analysis Integration Tool

SEAIT

COR / TPOC:

NSWCDD

Micro Analysis & Design, Inc.

www.maad.com

Programmatics

SEAIT

- Phase II SBIR*
  - Starting 8 June 99, Product in Nov 00
  - Sponsors:
    Dr. Daniel Wallace NSWC-Dahlgren
    Ms. Jennifer McKneely NAVSEA PMS 500F
- Phase III Sponsor:
  Army Research Lab HRED
- Contractor: Micro Analysis & Design (MA&D)

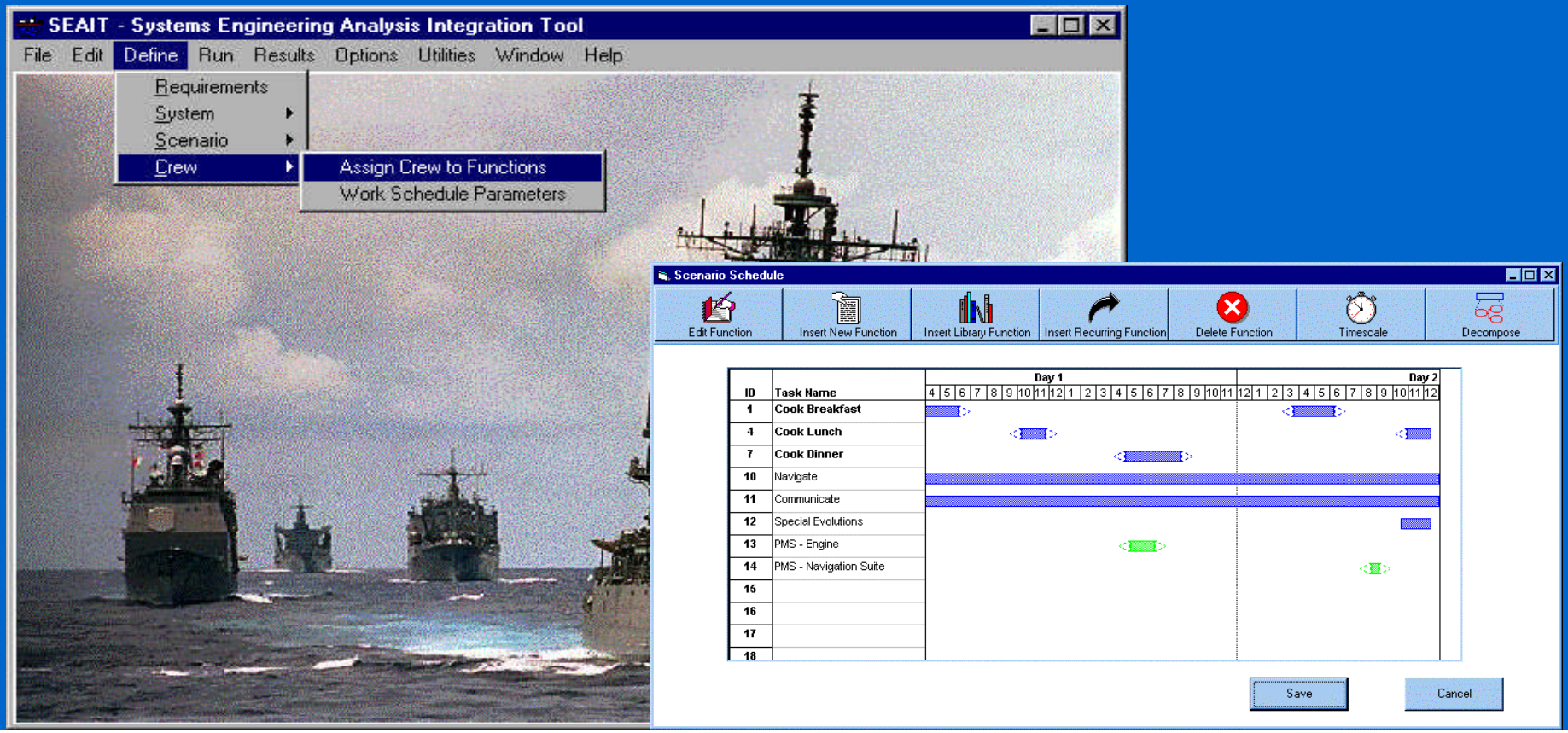
*Small Business Innovative Research

Description

Micro Analysis & Design

SEAIT

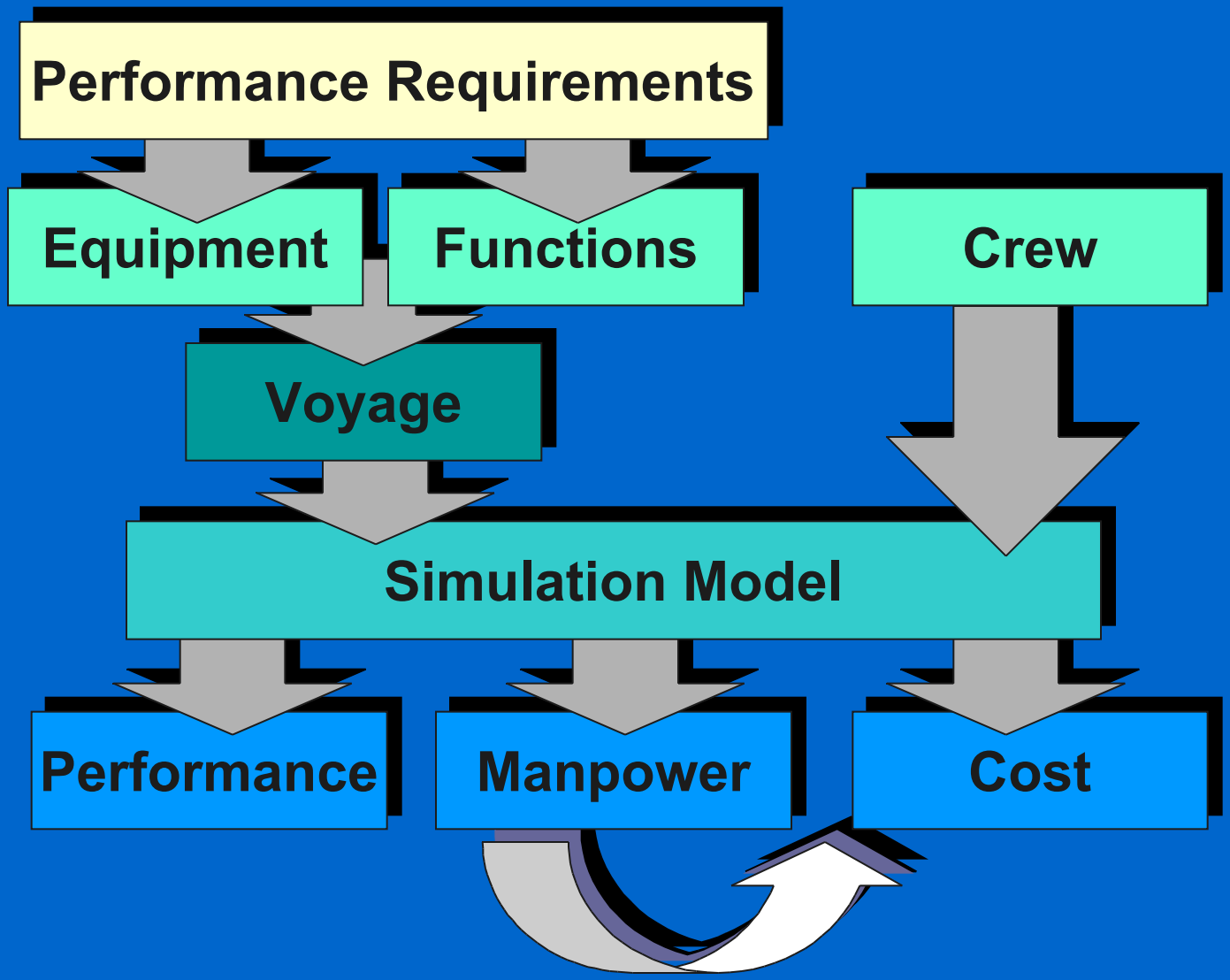
- An integrated performance evaluation, workload assessment, and decision support tool for assessing HSI aspects of US Navy and commercial ship designs.



Approach

Micro Analysis & Design

SEAIT

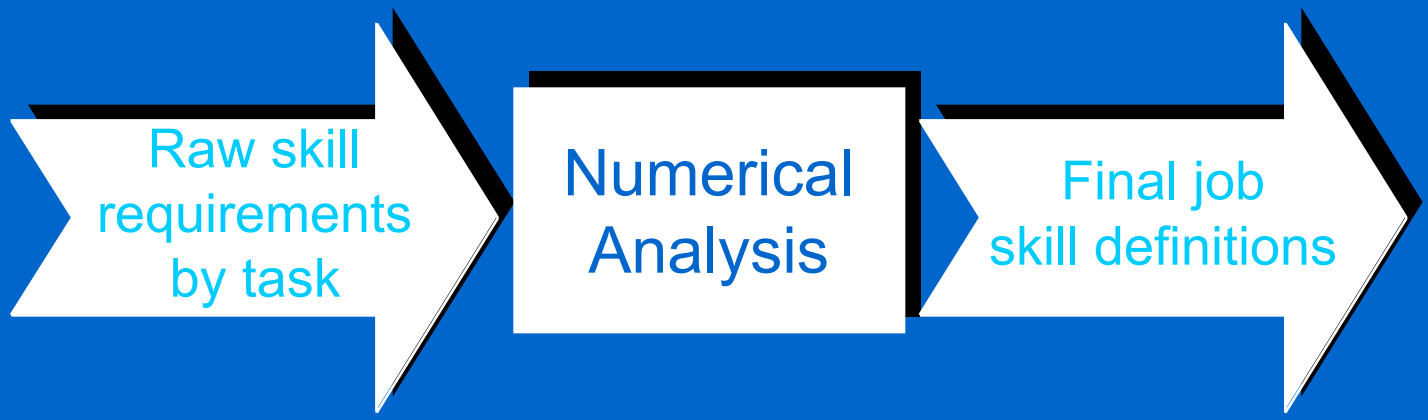


Innovations!

Micro Analysis & Design

SEAIT

- Jobs are Described by Skill Requirements
  - Jobs will be composed of skill groupings, using current Navy profiles as a starting point.
  - Responsibilities are driven out of the tasks assigned to each job.



Status

Micro Analysis & Design

SEAIT

- Due NOV 00
- HCI Usability Testing
- USN Database Parsing
- Populating JASS for USN Rates

SMART

Ship

Manpower

Analysis &

Requirements

Tools

SSC SD

GOAL

SMART

Provide the Naval Manpower Analysis Center a design process/tool set that allows NAVMAC to assess ship manpower & workload requirements for future combatants

Before Any Metal is Bent

Develop a scaleable **architecture permitting manpower analyses for varying warfighting postures; execution of multiple missions; ship organization & team structures; changes in ROCs/POEs; in-port work activities**

ROC=Required Operational Capability
POE=Projected Operational Environment

APPROACH

SMART

Work With Existing Systems

That Work Together

Develop New Solutions

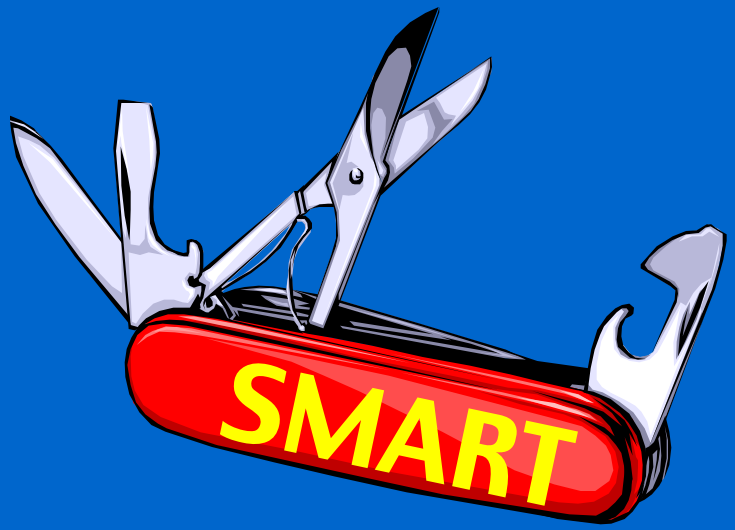
Naval Manpower Requirements System (NMRS)

Status

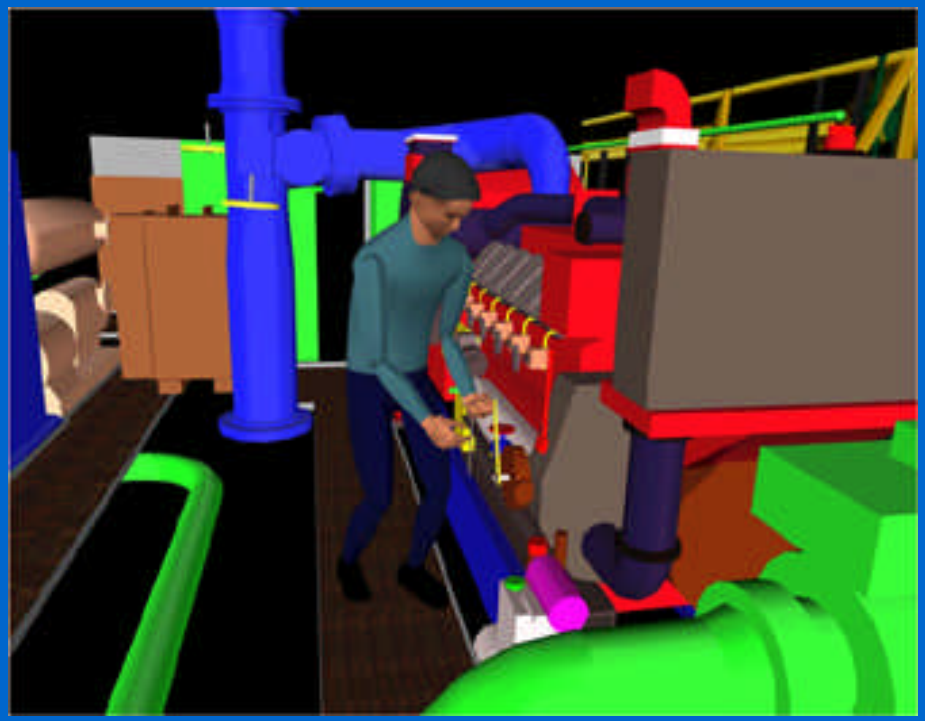
Micro Analysis & Design

SMART

- Not for DD 21 Eval
- Build 1 Review May00
- Build 3 CONOPS Under Review



Human Scriptable Animation (HSA)



Human

Scriptable

Animation

Language

Programmatics

HSA

- Phase I SBIR*
  - Starting Dec 99, Product in June 00
  - Sponsor:
    NSWC-Dahlgren
- Contractors: MA&D and BCI (Chris Parker)

*Small Business Innovative Research

Approach

Micro Analysis & Design

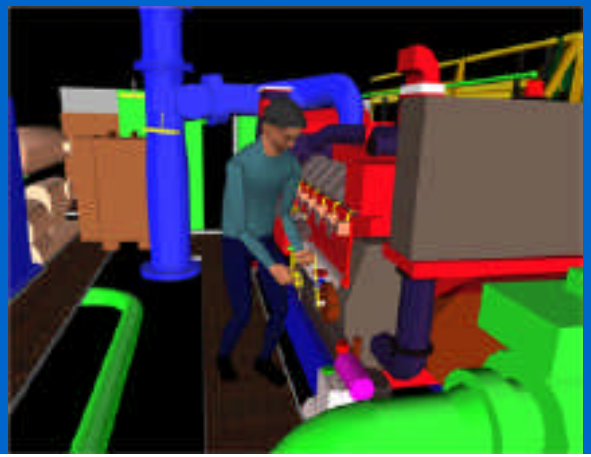
HSA

Goal:

- Develop Language Standard for Modeling/ Simulation Tools to ‘drive’ 3D
- human figure

Approach:

- Use IPME* and Envision/ERGO
- ICW SAE Committee 13



*Integrated Performance Modelling Environment

Status

HSA

- Completed User Workshop/Review of Concept & Integration Demo
- Report Due JUN 00

Integrated Command Environment (ICE)

DD21 Problem

- Manning Optimization
- Decision Making Speed & Accuracy
- Knowledge Management
- Communications
- Flexibility/Redundancy
- Technology

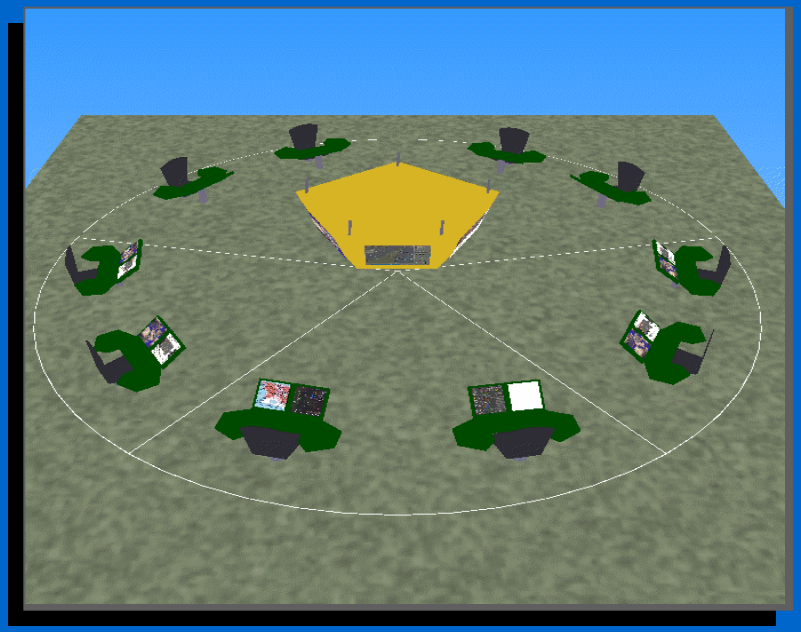
… Command & Control for the future

ICE Vision

- Create a testbed for command concepts
  - Assist imaginations
  - Stimulate debate and discussion
  - Identify issues
  - Collect data for evaluation
  - Flexible, rapidly reconfigurable
- Provide a vehicle to communicate ideas
  - Warfighters/Industry/Academia/Management

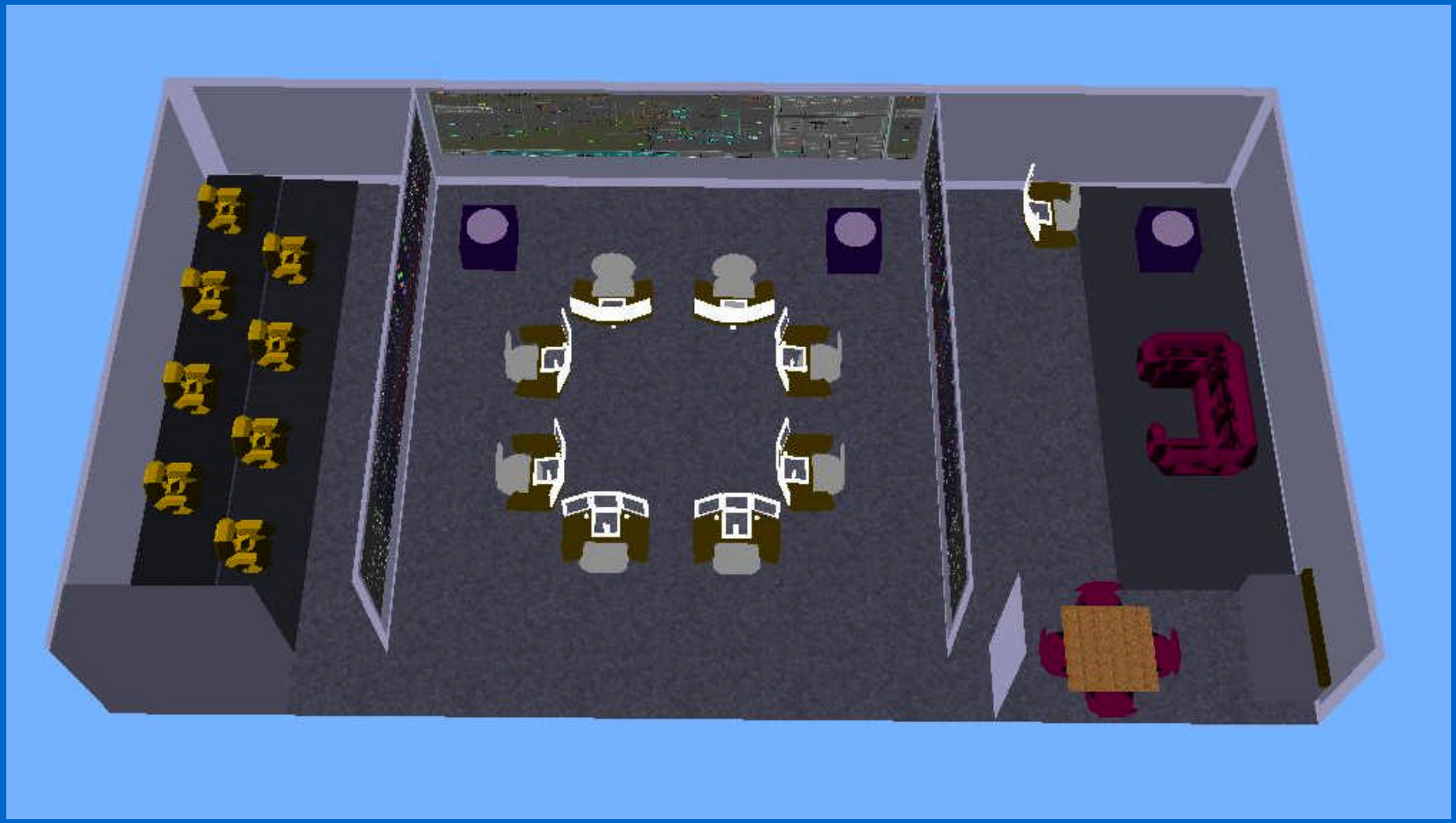
…while exploring the possibilities of an optimally configured command environment for the future…

ICE Concepts



ICE Total Environment ...

Today's ICE Concept



DEMONSTRATION/TESTING MAI

ICE Status

- Demo V2.0 CONOPS Development
  - Software due Nov00
  - Investigate ‘Immediate Situational Awareness’ for CO
  - Investigate 3D displays
- Next Step: Distributed Interactive Simulation

Programs Discussed

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